DRAFT FOR REVIEW, 1/5/2022

RESOLUTION

Before the Metro Local Contract Review Board

For the purpose of approving sole source agreement for Fire Rover System at Metro solid waste sites including the Metro South and Metro Central Transfer Stations

Resolution No. 22-5237

Introduction by Lydia Neill, Facilities & Environmental Stewardship Manager; Gabi Schuster, Finance and Regulatory Services Manager

WHEREAS, pursuant to ORS 279A.060 and Metro Code 2.04.010, the Metro Council is designated as the Local Contract Review Board for the agency; and

WHEREAS, Metro Code 2.04.062 requires Local Contract Review Board approval for contracts awarded without competitive bidding when it has been determined that the needed goods or services are available from only one source; and

WHEREAS, Metro Code 5.01.01 governs the regulation of solid waste disposal sites and solid waste facilities for the purpose of protecting and preserving the health, safety and welfare of Metro residents; and

WHEREAS, Metro owns and operates two transfer stations, Metro South at 2001 Washington St., Oregon City and Metro Central, at 6161 NW 61st Ave., Portland; and

WHEREAS, these transfer stations offer an array of public services that the majority of private transfer stations do not, such as public self-haul, recycling, and the collection of household hazardous waste; and

WHEREAS, both transfer stations have been operating for over 25 years in buildings and warehouses that were adapted for their use but never built expressly for a waste transfer and recycling facility; and

WHERAS, Metro prioritizes health and safety goals in the operations of these transfer stations, including avoiding conditions that may degrade public health and safety including, but not limited to, fires, vectors, pathogens and airborne debris; and

WHEREAS, fires are a regular occurrence on the transfer station tip floors at both Metro facilities, often caused by lithium ion and nicade batteries mixed into waste, which creates an extremely hot burning event in a very short amount of time; and

WHEREAS, these run away thermal events are a serious threat to the health and safety of customers, staff and the longevity of the facilities themselves and cost over $200,000 in 2021; and

WHEREAS, one company, Fire Rover has developed a unique solution to significantly decrease the chance of fires becoming out of control on the tipping floor though a combination of monitoring and technology that detects fires before they become fully engaged; and

WHEREAS, it would result in cost savings in building repairs, clean-up and station downtime and would not substantially diminish competition to contract with Fire Rover to provide these systems, now, therefore,

BE IT RESOLVED, that the Metro Local Contract Review Board hereby accepts the findings in the attached Staff Report and waives the competitive bidding requirement in accordance with Metro Code 2.04.062, and authorizes the Chief Operating Officer to enter into a sole source agreement with Fire Rover to provide fire suppression systems at the Metro South and Metro Central Transfer Stations in substantially the form attached as Exhibit A and B hereto.

ADOPTED by the Metro Local Contract Review Board this _____day of _____, 2022.

STAFF REPORT

Consideration of Resolution No. XX for the purpose of approving a sole source agreement for Fire Rover at Metro Solid Waste facilities, including contracts for Metro South and Metro Central Transfer Stations

Date: February 10, 2022

Presented by: Lydia Neill

PURPOSE

The Metro Council's (acting as the Local Contract Review Board) approval of the resolution will allow Metro to enter into a sole source contract with Fire Rover to acquire a monitored fire suppression system for the Metro South and Metro Central transfer stations.

BACKGROUND

In 2021 the Metro South and Metro Central transfer stations compacted and sent 570,000 tons of waste to the landfill in Arlington, OR. The garbage loads brought to the station by garbage haulers for compaction and load-out regularly contain "hot" loads – loads where batteries, chemicals and other flammable materials cause fires that ignite on the tipping floor and the surge pit. These fires are often started by batteries (hidden in small electronics, tools and toys) that are mistakenly thrown into the garbage by residents and brought in to the transfer stations by garbage haulers. These fires pose significant risk to staff, customers and transfer station infrastructure and expensive equipment which handle 60% of the regions solid waste transfer.

While both stations have traditional fire sprinkler systems installed throughout the facilities as required by code, many fires go undetected because of the way the sprinkler systems are designed and the unique characteristics of the facility. In the summer 2021, a fire at the Metro South Transfer Station did not trigger the sprinkler system due to the required height of the sprinkler heads and monitoring equipment. Furthermore, when activated, these sprinkler systems deluge water to put out the fire, but the large amount of water causes leachate issues in sanitary and storm systems. In addition, the accumulated water can damage the two trash compactors that are essential for operations, each valued at over $2 million dollars.

Fire Rover is a system that uses thermal imaging cameras and remotely activated firefighting nozzles to spray a fire extinguishing wetting agent to put out fires safely and effectively. The system uses a combination of thermography and video analytics to pinpoint and detect fires in their early stages and is able to identify hotspots before they flare-up and cause a run-away thermal event. The technology is housed in a self-contained unit in a 20ft storage container. The spray nozzle and thermal cameras will be mounted inside of the building to achieve coverage in areas where dry waste is stored prior to being compacted and hauled off site. Installing the system at Metro South and Metro Central would protect the safety of staff, customers and the large capital investments at these two facilities.

The Fire Rover system is monitored 24 hours a day, seven days a week by trained staff located in five "central stations" throughout the country. Cameras housed in on-site enclosures are able to detect heat that leads to fires, use thermal imaging to see what is occurring on the ground and alert staff to verify the detection and determine if there is fire that needs to be extinguished using the installed on-site equipment.

Fire Rover is designed to combat and extinguish Class A (ordinary combustibles such as wood, paper, plastics) and Class B (flammable liquid or gas) fires, both of which occur at Metro South and Metro Central facilities. Instead of water, an environmentally friendly wetting agent is used to target fires, which is especially effective for batteries, flammable or combustible liquid fires. The wetting agent produced by Fire Rover has very low surface tension allowing it to penetrate into bulky waste material significantly faster and deeper than traditional methods (water sprinklers, hoses). The wetting agent evaporates after it is sprayed, allowing for a much easier clean-up and avoids producing water leachate that is a contaminate to storm and sanitary sewer systems. After a fire is extinguished, the site receives a summary report with video of the incident for review. All equipment preventative maintenance, testing, repair and replacement is included in the service program, eliminating unexpected repair expenses. The equipment can be deployed to other locations should operations be relocated.

FINDINGS

Does not substantially diminish competition

Fire Rover uses patent pending technology that is unique to the industry. They utilize military-grade cameras, equipment and a fire suppression agent combined with a 24/7 monitoring service provided by trained staff which increases the resiliency of the stations and limits property and human health and safety risks. This is unique combination of technology, people and a maintenance plan that is not available from any other provider as of today. Fire Rover has been installed in over 250 industrial sites throughout the U.S. (including 48 of Waste Management's facilities) and is gearing up for installations in the U.K. and Australia. There are 150 sites where Fire Rover is the only fire suppression system in the facility (no sprinklers).

Provides cost savings

Fire Rover repairs and upgrades equipment and software without additional charge as needed through the lifetime of the service agreement. The initial investment in the system includes free technology upgrades as they become available. The monthly monitoring and maintenance charges are potentially less than the repair and clean-up costs of a fire that is extinguished with traditional sprinkler equipment. The maintenance agreement includes cleanings, camera adjustments, general maintenance and equipment/software upgrades.

A fire at Metro South in summer 2021 cost almost $200,000 in roof, electrical, cleanup and code violation fees. It is estimated that a loss policy to insure the value of the stations as a risk mitigation strategy would be equal or exceed the value of the monitoring costs on a yearly basis. Fire Rover would greatly lower the risk of a catastrophic fire at the transfer stations. Metro will also realize the savings of being able to stay on line, open and operating at these two critical facilities, by avoiding major fires that could shut-down or destroy the transfer stations. In addition, there will be little clean-up involved after a fire extinguishing event (often the case with water extinguished fires).

Unique characteristics and technical complexities

The Fire Rover system consist of the following unique components (see Attachment D for more details):

- Thermal detection and alarm system
- CCTV system to provide video of event in real time
- Fire suppression system using an environmentally friendly wetting agent
- Communications, monitoring and controls with station personnel

BUDGET IMPACT

The system proposed by Fire Rover at the Metro South Transfer Station would cost:

2 Fire Rover units 6 A310F thermal cameras 3 Nozzles 1 mobile unit	$311,200 (includes equipment and installation)
Monthly monitoring and maintenance	$ 3,775/mos

The system proposed by Fire Rover at the Metro Central Transfer Station would cost:

2 Fire Rover units	
5 A310F thermal cameras 4 nozzels I mobile unit	

EXECUTIVE OFFICER RECOMMENDATIONS

Allow the purchase of the units as specified and enter into a monitoring agreement with Fire Rover to protect the life safety of customers, staff and the infrastructure at the Metro South and Central Transfer Stations.

CONTRACTS ATTACHMENTS

A - Metro South Design & Proposal

B - Metro Central Design & Proposal

C - Master Service Agreement

D – Fire Rover Unique System Components

Attachment D

FireRover System Components

Detection and Alarm – A FLIR A310F thermal camera designed for condition monitoring and fire prevention provide early detection of hotspots. The FLIR A310F comes standard with built-in analysis functions like spot, area measurement, and temperature difference. The FLIR A310 F is an extremely rugged system that meets IP66 requirements, protecting the camera from dust and water. A listed Optical Flame Detection (OFD) can be co-located with the FLIR camera. The FM approved OFD is capable of detecting flaming fires at 150 feet. The FLIR thermal camera and the OFD are attached to an UL listed and FM approved Honeywell VISTA-32FBPT Fire Alarm Control Panel (FACP). The panel is listed to UL 864 and UL 1076.

CCTV System – A series of CCTV dome cameras monitor the interior of the FireRover for system functionality and the exterior for fire verification and suppression activities. The CCTV system allows the FireRover to go above and beyond the Inspection, Testing, and Maintenance (ITM) schedule required by NFPA. Interior cameras allow for monitoring of the Fire Alarm Control Panel (FACP), suppression system flow and pressure, system tampering, and internal environmental conditions. Two external cameras provide a visual verification of the thermal imager. One camera, offset from a camera co-located with the thermal imager, provides a divergent view.

Fire Suppression System – The fire suppression system is typical of industry standards. The F-500 UL listed wetting agent used is compliant with NFPA 18A. The delivery of the agent is via an Elkhart Brass Nitro monitor. The wetting agent is supplied to the monitor via a 1,000 gallon tank built to American Society of Mechanical Engineers (ASME) standards. System pressure is supplied by a set of Nitrogen cylinders (DOT) piped through a Harris high flow regulator and standard piping.

Communications, Monitoring, and Controls – Alarms and troubles from the control panel are sent to a UL listed central station compliant with UL 827 Central-Station Alarm Services, NFPA 72 National Fire Alarm and Signaling Code. A Honeywell iGSMCFP4G Internet and 4G commercial fire communicator, that is UL 864, listed transmits the alarms. Control of the suppression system is achieved via the UL central station with trained personnel located at redundant stations across the continental US.

Power Supply – The complete system is equipped with a battery backup, so operation can occur in the event primary power is lost. The FireRover uses UL listed batteries to supply 1 hours of backup power. In the field, a dedicated primary power feed is supported by a backup generator or additional batteries to obtain the code mandated 24 hours.

Environmental Controls – Ensuring the FireRover components function properly dictates that they are kept within their environmental temperature and humidity ranges. The FireRover container is insulated and fitted with a 1500W electric heater as well as an air conditioning unit. The units are controlled by a thermostat and monitored via dual temperature sensors attached to the alarm panel. Allowing the FireRover to function in extreme environments.

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STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 22-5237 OF THE METRO COUNCIL ACTING AS THE METRO CONTRACT REVIEW BOARD FOR THE PURPOSE OF APPROVING A SOLE SOURCE AGREEMENT FOR FIRE ROVER TO ACQUIRE A MONITORED FIRE SUPPRESSION SYSTEM AT METRO SOLID WASTE FACILITIES, INCLUDING CONTRACTS FOR METRO SOUTH AND METRO CENTRAL TRANSFER STATIONS.

Date: February 10, 2022 Prepared by: Lydia Neill/Estee Segal

BACKGROUND

In 2021 the Metro South and Metro Central transfer stations compacted and sent 570,000 tons of waste to the landfill in Arlington, OR. The garbage loads brought to the station by garbage haulers for compaction and load-out regularly contain "hot" loads – loads where batteries, chemicals and other flammable materials cause fires that ignite on the tipping floor and the surge pit. These fires are often started by batteries (hidden in small electronics, tools and toys) that are mistakenly thrown into the garbage by residents and brought in-to the transfer stations by garbage haulers. These fires pose significant risk to staff, customers and transfer station infrastructure and expensive equipment which handle 60% of the regions solid waste transfer.

While both stations have traditional fire sprinkler systems installed throughout the facilities as required by code, many fires go undetected because of the way the sprinkler systems are designed and the unique characteristics and use of the facility~~y~~ies. These systems are installed in the bays that accept and process garbage but need to be located at the right height to clear equipment so they have been minimally effective when ~~we have had fire events~~there have been fire events. ~~In the summer 2021, a fire at the Metro South Transfer Station did not trigger the sprinkler system due to the required height of the sprinkler heads and monitoring equipment.~~ Traditional sprinkler systems are either wet or dry systems depending upon whether the piping system is charged with water all of the time or is held dry until a sensor is activated and water flows through the line to sprinkler heads. The systems typically have a riser that distributes water from the domestic system to a pipe system that is zoned with~~,~~ sprinkler heads, sensors and a monitoring or call box that dials the call in an emergency.

Furthermore, when activated, these sprinkler systems deluge water to put out the fire, but the large amount of water causes leachate issues in sanitary and storm systems. In addition, the accumulated water can damage the two trash compactors that are essential for operations, each valued at over $2 million dollars, and located below the surge pit where the water drains. ~~. The equipment is located below the surge pit and is subject to water draining from the surge pit where fires have occurred and water has been applied to extinguish them.~~

In ~~the~~ summer 2021, a fire at the Metro South Transfer Station did not trigger the sprinkler system due to the required height of the sprinkler heads and monitoring equipment. Clackamas Fire Department responded and accessed on site hydrants to extinguish the fire, in addition to cutting into the roof of the building to ventilate smoke. ~~Typically if an event requires a fire~~

~~department response a large amount of water is applied to the area which can cause leachate issues. If traditional sprinkler system it also has the potential to dump a large amount of water into the surge pit.~~Water accumulated in the surge pit and around the compactors, and caused leachate….

Fire Rover is a system that uses thermal imaging cameras and remotely activated firefighting nozzles to spray a fire extinguishing wetting agent to put out fires safely and effectively. The system uses a combination of thermography and video analytics to pinpoint and detect fires in their early stages and is able to identify hotspots before they flare-up and cause a run-away thermal event. This coordination of technology, pinpoint response and round-the-clock~~24/7~~ human monitoring is unique.

The technology is housed in a self-contained unit in a 20ft storage container that is conditioned to protect the wetting agent and control systems. Monitoring of the site is coordinated with onsite staff to ensure a targeted response that is appropriate based on staff ~~repources~~resources site conditions and level of the event. The spray nozzle and thermal cameras ~~will be~~are mounted inside of the building to achieve coverage in areas where dry waste is stored prior to being compacted and hauled off site. Installing the system at Metro South and Metro Central would protect the safety of staff, customers and the large capital investments at these two facilities. Given the importance of the facility to the region's economic health, it is paramount that a multi-point risk management system be in place.

The Fire Rover system is monitored 24 hours a day, seven days a week by trained staff located in five "central stations" throughout the country. Cameras housed in on-site enclosures are able to detect heat that leads to fires, use thermal imaging to see what is occurring on the ground and alert staff to verify the detection and determine if there is fire that needs to be extinguished using the installed on-site equipment.

Fire Rover is designed to combat and extinguish Class A (ordinary combustibles such as wood, paper, plastics) and Class B (flammable liquid or gas) fires, both of which occur at Metro South and Metro Central facilities. Instead of water, an environmentally friendly wetting agent is used to target fires, which is especially effective for batteries, flammable or combustible liquid fires. The wetting agent produced by Fire Rover has very low surface tension allowing it to penetrate into bulky waste material significantly faster and deeper than traditional methods (water sprinklers, hoses). The wetting agent evaporates after it is sprayed, allowing for a much easier clean-up and avoids producing water leachate that is a~~n~~ contaminate to storm and sanitary sewer systems, unlike traditional sprinkler systems that deluge the area with water. After a fire is extinguished, the site receives a summary report with video of the incident for review. All equipment preventative maintenance, testing, repair and replacement is included in the service program, eliminating unexpected repair expenses and ensuring the essential equipment is maintained to provide and respond to an emergency. The equipment can be deployed to other locations should operations be relocated because it i~~wa~~s mostly self-contained. Existing sprinkler systems and monitoring will remain in place and Metro anticipates deploying them in future construction.

FINDINGS

Pursuant to Metro Code Section LCRB 47-0275, staff makes the following findings in support of exempting the procurement of the Fire Rover system for Metro South and Metro Central from competitive bidding, and authorizing use of a Request for Proposal (RFP) process for a goods or service:

(a) Based on a brief description of the Contract or Contracts to be covered including volume of contemplated future purchases;

~~Anything to say here? N/A?~~If Metro were to develop additional properties for material recovery or as transfer stations, a similar system may be appropriate to protect~~what~~ staff, the public and the equipment.

(b) Based on a description of the Goods or Services to be purchased; That current market research supports the determination that the Goods or Services are available from only one seller or source;

Staff has researched industry solutions and has consulted with several other operators in Washington, ~~and~~ California, and Michigan ~~-~~to determine the systems that they have in place and other potential solutions. …

Fire Rover uses a patented technology that is unique to th~~e~~is industry. They utilize military-grade cameras, equipment and a fire suppression agent combined with a 24/7 monitoring service provided by trained staff that provides a targeted response based on the emergency that has been identified which increases the resiliency of the stations and limits property and human health and safety risks. This is a unique combination of technology, people and a maintenance plan that is not available from any other provider as of today. Fire Rover also has~~They also have~~ unmonitored mobile units available that may address needs that are outside of the buildings and could include fires in vehicles and trailers.

~~Other fire suppression systems use sprinklers with water… Costco offers….~~

~~Staff has spoken to other facility owners and asked about other considered options…~~

(c) That the efficient utilization of existing Goods or Services requires the acquisition of compatible Goods or Services;
N/A

(d) That the Goods or Services required for the exchange of software or data with other public or private agencies are available from only one source;
N/A

(e) That the required product is data processing equipment which will be used for research where there are requirements for exchange of software and data with other research establishments;
N/A

(f) That the Goods or Services are for use in a pilot or an experimental project; or
N/A

(g) Other findings that support the conclusion that the Goods or Services are available from only one source.
This unique system ~~that~~ is only available from Fire Rover and not from other traditional fire sprinkler system companies due to the combination of equipment, controls, monitoring, and ~~services required~~maintenance and addresses the real fire risks that are inherent in operating ~~to address the risks identified at~~ the Metro Central and South Transfer Stations. ~~See above.~~

ANALYSIS/INFORMATION
1. **Known Opposition:** None

2. **Legal Antecedents:** LCRB Rule 47-0275and Oregon Revised Statute 279B.075.

3. **Anticipated Effects:** None

4. **Budget Impacts:** The system proposed by Fire Rover at the Metro South Transfer Station would cost:

2 Fire Rover units 6 A310F thermal cameras 3 Nozzles 1 mobile unit	$311,200 (includes equipment and installation)
Monthly monitoring and maintenance	$ 3,775/mos

The system proposed by Fire Rover at the Metro Central Transfer Station would cost:

2 Fire Rover units	
5 A310F thermal cameras 4 nozzels I mobile unit	

WPES may choose to purchase additional Fire Rover stand-alone and/or, movable units for other facilities in the future.

RECOMMENDED ACTION
Metro Council, acting as the Local Contract Review Board, approves the purchase of the Fire Rover systems as specified to protect the life safety of customers, staff, and the infrastructure at the Metro South and Central Transfer Stations. Metro Council, acting as the Local Contract Review Board,

also authorizes the execution of the resulting contract by the Chief Operating Officer in a form to be approved by the Office of Metro Attorney.

ATTACHMENTS
Fire Rover Patent